

# NGDA Dataset Report

**Official NGDA Title:** NPS National Parks Dataset

**Metadata Record Title:** Administrative Boundaries of National Park System Units 02 12 2015 - National Geospatial Data Asset (NGDA) NPS National Parks Dataset

**A-16 NGDA Theme:** Cadastre

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## Metadata:

**Registration Status:** Complete

**Registered on** 2/12/2015

**GeoPlatform Link\*:** <https://www.geoplatform.gov/node/243/9d405135-3b44-4d9b-b215-68beeef2ebd>

**Data.gov Metadata Link\*:** <http://catalog.data.gov/harvest/object/a2d234bd-99a3-441a-82ad-9558a1c058d7/html>

\*If the metadata has been updated and reharvested after publication of this report, the link may no longer be valid. The dataset may be searched for manually in Data.gov or GeoPlatform.gov.

# NGDA Lifecycle Maturity Assessment (LMA) Report

## Time Frame:

Baseline assessment responses include data set activities from 1872 to 2015.

## LMA Submission:

**Status:** Complete

**Date:** 9/17/2015

**Extension Requested:** No

## LMA Reviewer(s):

**Supervisor:** Bill Shaddox

**Theme Lead:** Did not review

**Executive Champion:** Did not review

**SAOGI\*:** Did not review

**Other:** Lorri Peltz-Lewis

## LMA Verifier:

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## Attachments:

To get access to any attachments referenced in the report, email the LMA Help Desk at [NGDA\\_LMA\\_help@fgdc.gov](mailto:NGDA_LMA_help@fgdc.gov). Please use the subject "Dataset Report Attachment(s)" and indicate the associated official NGDA title.

\*Senior Agency Official for Geospatial Information (SAOGI)

## Lifecycle Maturity Assessment (LMA) Summary

### Overall Maturity:

**Optimized; Established**

General Questions: 100%

**Optimized; Established**

Stage 4 - Access: 100%

**Optimized; Established**

Stage 1 - Define/Plan: 88%

**Mature; Consistent**

Stage 5 - Maintain: 82%

**Mature; Consistent**

Stage 2 - Inventory/Evaluate: 100%

**Optimized; Established**

Stage 6 - Use/Evaluate: 78%

**Mature; Consistent**

Stage 3 - Obtain: 91%

**Optimized; Established**

Stage 7 - Archive: 100%

**Optimized; Established**

### NGDA Dataset Maturity Definitions:

How To Calculate Maturity: [https://www.geoplatform.gov/sites/default/files/How\\_to\\_Calculate\\_Maturity.pdf](https://www.geoplatform.gov/sites/default/files/How_to_Calculate_Maturity.pdf)

Maturity	Maturity Characteristics for All Lifecycle Stages
Optimized; Established Rank = 5	Dataset meets virtually all business needs of all users. The dataset is considered authoritative by owners and secondary users. It is curated across all stages of the approved lifecycle. Future needs are defined on a regular basis and resources for addressing both current and future business requirements are available.
Mature; Consistent Rank = 4	Dataset meets all the business needs of the primary owner and most of the secondary users. The dataset is curated and used as authoritative by the primary owner. Dataset is used widely by secondary users actively engaged in sustaining the dataset. Future needs are identified and steps are planned to address these. All stages are supported and reviewed on a recurring basis. The dataset is well managed in relation to the approved lifecycle.
Managed; Predictable Rank = 3	Dataset meets a significant number of the business needs of the primary owner and is widely used as an authoritative resource by secondary users. Benchmark activities are occurring in at least four of the approved lifecycle stages. Management practices in relation to the approved lifecycle is moderate but consistent. Dataset is integrating changing business requirements in lifecycle stages impacting overall maturity.
Transition; Transformation Rank = 2	Dataset meets business needs of the primary owner and has moderate use by secondary users. Benchmark activities are occurring in at least three stages. Efforts to integrate funding, include partners, and obtain data are not supported in a sustained manner. Management practices in relation to the stages of the approved lifecycle is limited.
Planned; Initial Development Rank = 1	Dataset limited in meeting business needs of the primary owner. Benchmark activities in the approved lifecycle are just starting to consider secondary uses, partnerships are forming to support additional dataset uses. Dataset development is in a very early stage. Minimal or limited management against the benchmarks in the approved lifecycle.
No Activity Rank = no activity	Dataset meets project or local business needs of the primary owner, secondary or additional uses or users were not considered, not recognized as an authoritative data or is part of a similar dataset. Not managed to any of the benchmarks in the approved lifecycle.

## General Questions for All Stages

1) Is there a recurring process to obtain funding for all lifecycle stages of this dataset?

**Answer:** Funding support is part of agency budget on a recurring basis, funding is consistent and tied to business processes, and supports all lifecycle stages.

**Justification Comment:**

**Attachment(s):** 0

This data set is produced by the Land Resources Division (LRD) of the National Park Service. According to NPS Directors Order 25 (<http://www.nps.gov/policy/DOrders/DOrder25.htm>) land status maps will be prepared to identify the ownership of the lands within the authorized boundaries of the park unit. These maps, showing ownership and acreage, are the "official record" of the acreage of Federal and non-federal lands within the park boundaries.

This activity predates modern spatial data requirements. However, LRD has converted these hard copy land status map to digital data through an examination of each units enabling legislation, deeds, survey data, and other legal documents. Topology is created from the boundary and ownership data layers of these land status maps and exported as GIS data. LRD then aggregates each unit into a national boundary data set. Additionally, currently ownership data for each unit is also exported as GIS data from the land status map production environment. This ownership data along with the unit's legislated boundary and metadata are zipped and provided for park specific downloads.

Functionally the creation of this data is a side benefit of NPS land status mapping that is done in support land acquisition business process. Acquisition activities within NPS are funded through Land and Water Conservation Funds (LWCF). Therefore LWCF funds the creation of this data. The request for LWCF funding is contained within the NPS budget request. To date this funding has been recurring; however, it is dependent upon the funding of LWCF not the traditional agency budget for NPS. If LWCF were not funded or experienced a substantial reduction in funding it would threaten the ability to meet the funding requirements for all life cycle stages of this data set.

2) Is there a process in place to ensure that open government and transparency guidelines are followed in all lifecycle stages for this dataset?

**Answer:** Process is published as appropriate with respect to sensitivity requirements, process is transparent, published appropriately.

**Justification Comment:**

**Attachment(s):** 0

The Land Resources Division (LRD) has developed two internal documents addressing this question. The NPS-LRD Digital Map Conversion Standard Operating Procedures (SOP) was originally developed in 2006 to cover the creation of this data. This document is updated regularly to accommodate changing digital data requirements and technology. The "Land Acquisition Procedures Manual" (LAPS) deals with the publication of this data as well as announcing changes to NPS boundaries in places like the Federal Register. This document has existed since 1979. Both these documents are considered sensitive and as such are internal to the NPS Land Resources Division. LAPS is also routinely updated to deal with changing requirements like ensuring the protection of PII information.

Supporting legal documents like deeds, legislation, and land status maps are posted to an internal document archives maintained by the Land Resources Division called LandsNet (<http://landsnet.nps.gov/>). Additionally most of these documents are numbered and supplied to the NPS Technical Information Center (TIC) according to NPS Director's Order 11-D (<http://www.nps.gov/policy/DOrders/DO-11D.pdf>). TIC's information system was planned, developed and refined over 40 years. It is the oldest and largest information system in the National Park Service. TIC is designated by the Service as the central repository for managing all NPS-generated drawings,

specifications, scientific and technical reports. TIC holding are accessible through the ETIC Information Gateway (<http://etic.nps.gov/>).

This data is also sent to the Federal Records Centers (FRC) that is operated by the National Archives and Records Administration (NARA) to house the records of Federal agencies. As the nation's record keeper, documents that have been determined to have legal or historical significance are preserved according to 44 U.S. Code § 3103 - Transfer of records to records centers. NPS retains legal custody, even though the records are in the physical custody of FRC.

The data itself along with supporting information such as metadata is regularly published to the agency's data portal, IRMA (<https://irma.nps.gov/App/Portal/Home>). The IRMA website is publicly accessible and is also harvested by Data.gov. CSDGM metadata is tagged for recognition as a NGDA data asset on Geoplatform.gov. Numerous other services and formats have been created that provide both Government and public access to this data. Some examples include a WMS, a REST Service, and AGOL implementation and KMZ data downloads.

**3)** Are there processes and tools in place so that staff are sufficiently knowledgeable to ensure a continuity of the dataset for all stages of the lifecycle, especially during staffing transitions?

**Answer:** Processes and tools to ensure dataset continuity are in place and implemented for all lifecycle stages.

**Justification Comment:**

**Attachment(s):** 0

As stated in question 2 the Land Resources Division (LRD) has developed two internal documents addressing this question. Both these documents are considered sensitive and as such are internal to the NPS Land Resources Division. The NPS-LRD Digital Map Conversion Standard Operating Procedures (SOP) was originally developed in 2006 to cover the creation of this data. This document is updated regularly to accommodate changing digital data requirements and technology. SOP is readily available to all LRD staff members.

The "Land Acquisition Procedures Manual" (LAPS) deals with all aspects of the land acquisition process. Two chapters provide complete information relating on how to create and maintain these data sets. Chapter 5 specifically addresses land status mapping standards and chapter 4 addresses the maintenance of the ownership databases that provide data attributes. This document has existed since 1979. LAPS is routinely updated to deal with changing business requirements.

Continuity of the datasets is ensured by employing staff that meet departmental standards for cartographic series positions. Program specific training for new or transitioning staff is required. Staff is offered regular training and professional development opportunities to ensure that all LRD cartographic employees are given the tools necessary to maintain this data set in the midst of changing technology and end user requirements. This training covers generating, maintaining, and updating the data and metadata necessary to meet FGDC standards. Furthermore, staff is encouraged to strengthen skills sets and deepen knowledge in all areas pertaining to GIS data creation, data management, and data publication. Regular conference calls and face to face training events are conducted to ensure all regional cartographic employees are kept up to date on changes to business processes.

Succession management plans are in place to ensure continuity of the data during staff transitions. These plans are continually re-examined to accommodate the changes to the landscape of the National Park Service as a whole and the Land Resources Division specifically. In the event of staffing transitions seamless shifts currently occur without any noticeable change to the data sets produced.

## STAGE 1 - Define/Plan

4) Are user and business requirements defined and formalized?

**Answer:** A recurring process exists for gathering partners/ stakeholders requirements is in place and is in the beginning stages of implementation.

**Justification Comment:**

**Attachment(s):** 0

This data set is primarily created and maintained to support the NPS land acquisition business process. This data both in hard copy and digital formats has supported that business process for decades. Internally the Land Resources Division (LRD) has worked with individual parks, regions, other programs, and offices like the NPS Legislative and Congressional Affairs to successfully meet this mission for years. Within NPS LRD is an active member of the Geographic Information Systems Council. This body is used to identify new NPS users and/or changing data requirements.

Over that past several years a growing group of users has emerged for this data. LRD works to identify new users and define their requirements. When a new partner or stakeholder is identified the data is provided via the NPS IRMA data portal (<https://irma.nps.gov/App/Portal/Home>). This data portal is publically accessible. Efforts are made to educate the users about the data both through direct contact, metadata, and other documentation that describes the data.

Meet the requirements of new partners and stakeholders as well as responding to the changing requirements of existing users remains a challenge of LRD. To meet this challenge LRD works within groups like the FGDC Federal Lands Working Group, the National Boundaries Group, and the FGDC Cadastral Subcommittee to identify user requirements and determine the most efficient way to meet the need of other government stakeholders outside the NPS.

Finally considerable efforts are made to educate private users about proper data usage. This includes park specific metadata and responding directly to data inquiries from private citizens and companies.

5) How are partners/stakeholders involved in the requirements collection process?

**Answer:** A recurring process exists for gathering partners/ stakeholders requirements is in place and is in the beginning stages of implementation.

**Justification Comment:**

**Attachment(s):** 0

As stated in question 4 this data set is primarily created and maintained to support the NPS land acquisition business process. Collecting requirements to support this business process are well established and documented in NPS-LRD Digital Map Conversion Standard Operating Procedures (SOP) and the "Land Acquisition Procedures Manual" (LAPS). Collection of requirements from other parts of the NPS is primarily handled through participation in the NPS Geographic Information Systems Council (GISC) and the Enterprise Geographic Information Systems Subcommittee (EGISS). Direct consultation with parks, programs, and regions also plays a major role in identifying internal NPS requirements.

Requirements of other Federal partners are identified through interagency coordination teams like the National Boundaries Group (NBG), a working group under the A16 theme of the Federal Geographic Data Committee (FGDC), the Federal Lands Working Group, and Federal Interagency Council on Outdoor Recreation (FICOR). Interest in NPS ownership and boundary data from groups like these is increasing as efforts like PAD-US, SMA, and Recreation.gov gain momentum. The NPS Land Resources Division is a charter member of several of these groups and remains active in order to keep up to date on emerging Federal requirements.

Requirements of the private sector are not actively sought out. However, this data is available to these users through the NPS IRMA portal, the NPS REST service, and Geoplatform.gov. Points of contact,

data quality, source material, and appropriate data use are identified in metadata. Questions from state and local governments as well as the private sector are regularly responded to either through direct communication with the NPS Land Resources Division or through participation in NPS teams formed to respond to requests coming from outside the Federal government.

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6) Is there a quality assurance process for the dataset?

**Answer:** Quality assurance published as appropriate with respect sensitivity requirements.

**Justification Comment:**

**Attachment(s):** 0

There are significant quality control/quality assurance processes in place for this data set. Quality assurance documents like “Land Acquisition Procedures” Manual define policy relating to all aspects of data creation from source material to publication. Chapter 4 defines the policies and procedures of building, maintaining, and distributing the land owner information that populates the attributes of the geospatial data. Chapter 5 outlines all land status mapping and GIS data policies, procedures, and standards. This includes approved data sources, approved software, required map and GIS data content, CAD drawing standards, the templates, and tools used in data production.

The Digital Map Conversion Standard Operating Procedures (SOP) document covers all procedures used for the creation and maintenance of this digital data. A Legislative Map Guidelines document has been developed in conjunction with the NPS Office of Legislative and Congressional Affairs to ensure any new units and changes to existing boundaries are based on quality data and can easily be incorporated into existing national datasets.

LRD ensures compliance with all NPS wide standards activities like Director’s Order 10-B. LRD currently uses the NPS Metadata Tools and Editor along with standard metadata templates to create Federal Geographic Data Committee (FGDC) compliant metadata in a Content Standard for Digital Geospatial Metadata (CSDGM) format. LRD is also active involved in the FGDC ISO Implementation Forum so we can convert to ISO standards when NPS moves from a CSDGM metadata standard to ISO.

Communication is an important part of LRD’s quality assurance process. Several online mapping applications like the TractsNet internet map service & web map service, Lands tract and boundary REST Service, and KMZ downloads provide NPS employees view access to LRD’s data at several lifecycle stages to foster collaboration with individual park, regions and other program offices. The LandsNet website (<http://landsnet.nps.gov/>) provides detailed information about all aspects of the Lands program as well as an online document archives accessible by all NPS employees. All source material used to create this data set along with deeds, change orders, legal descriptions, metadata, legislation, and segment maps is available in these document archives.

Quality control functionally consists of database integrity checks to ensure all attributes from the ownership databases are correct and match the GIS data and final segment maps. Attribute integrity is also verified in the CAD production environment by verify proper layering and symbology of CAD elements through dynamic linkage to Lands ownership databases. Tract integrity checks consist of validating coordinate geometry against deeds, segment maps, legal descriptions, legislation and surveys. Spatial integrity checks include use of control sources (e.g. monumentation), surveys, imagery, topographic maps, PLSS, and other Federal GIS data. Once everything is brought together topology is built verify the accuracy of all polygons. This data is compared to other existing boundary data as well as validated against any adjacent NPS units. There is a final review and approval of each unit’s data at regional Lands offices. Not all NPS units have a dedicated cartographic or GIS staff but those that do are encouraged to be involved in this process from the early stages through publication.

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7) Is there a process to evaluate the sensitivity, privacy, and confidentiality of this dataset?

**Answer:** Sensitivity, privacy, and confidentiality evaluations fully implemented, reviewed and updated on a recurring basis.

**Justification Comment:**

**Attachment(s):** 0

All publicly released tract and boundary GIS datasets contain no sensitive or personally identifiable information (PII).

The ownership databases from which the attributes of the tract and boundary GIS data are extracted contain PII information about land owners. Appropriate steps have been taken to ensure the confidentiality and security of this data according to the Department of Justice's Title Standards 2001 guidelines. It should also be stated that this information is a matter of public record.

These ownership databases were developed for use by the Land Resources Division to monitor the real estate interests acquired by the NPS and to assist Land Acquisition Managers in acquiring new lands. One database houses deed information once the acquisition process is complete. This database is used to produce the official listing of acreage reports for the National Park Service. All data in this database can be released to the public. The other database is used to track all steps in the land acquisition process for each parcel of land in the National Park System. Data in this database is protected under the Privacy Act. Both databases are maintained with safeguards meeting the requirements of 43 CFR 2.51. The following Federal Register notices have been file regarding this database:

48 Federal Register 51696

64 Federal Register 61936

73 Federal Register 63992

Only two attributes of the GIS data are derived from these databases. One attribute simply lists the parcel current ownership. No actual information about the owner is provided. This field simply provides users information on if the parcel is owned by NPS, another Federal agency, a State or local government or a private entity. The second attribute simply states the type of ownership NPS has on a given property; fee, easement, right-of-way etc... Automated processes and manual reviews by several staff members prior to publication of GIS data ensure no sensitive or PII information is released.

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**8)** Are defined data standards used in collecting, processing, and/or rendering the data?

**Answer:** Standards fully implemented documented and published as appropriate.

**Justification Comment:**

**Attachment(s):** 1

Substantial standards for the collection and processing of this tract and boundary GIS data have been developed. These standards call for the use of the most accurate and current source material available. These data standards and requirements are readily accessible to all Lands staff.

As previously stated Lands has developed two internal documents addressing standards. The NPS-LRD Digital Map Conversion Standard Operating Procedures (SOP) was originally developed in 2006 to cover the creation of this data. This document is updated regularly to accommodate changing digital data requirements and technology. The "Land Acquisition Procedures Manual" (LAPS) deals with the publication of this data as well as announcing changes to NPS boundaries in places like the Federal Register. This document has existed since 1979. Both these documents are considered sensitive and as such are internal to the NPS Land Resources Division. LAPS is also routinely updated to deal with changing requirements.

Finally both the tract and boundary data have mature standards associated with the publication of the

data sets. These standards are provided in the metadata for each individual unit. Additionally XML files for the tract and boundary data standards have been uploaded for this response.

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## STAGE 2 - Inventory/Evaluate

9) Is there a process for determining if data necessary to meet requirements already exist from other sources (either within or outside the agency) before collecting or acquiring new data?

**Answer:** Process for determining appropriate data is being reused fully implemented, reviewed, and updated on a regular basis.

**Justification Comment:**

**Attachment(s):** 0

In a strict sense this question is not applicable for this data set. According to NPS Directors Order 25 (<http://www.nps.gov/policy/DOrders/DOrder25.htm>) land status maps will be prepared to identify the ownership of the lands within the authorized boundaries of the park unit. These maps, showing ownership and acreage, are the "official record" of the acreage of Federal and non-federal lands within the park boundaries. This Director's Order established LRD as the authoritative data provider of NPS legislative boundaries and ownership data.

Even though LRD is the authoritative data source there is a well defined list outlining the use of appropriate source material in "Land Acquisition Procedures Manual" (LAPS) - Chapter 5. Prior to the creation of any data, an assessment is done to identify any source material that can be used to create and/or supplement the tract and boundary GIS data creation process. The most accurate and up to date data is always considered as well as use of data from authoritative providers. LRD's use of other data as source material in relation to this data set is described in detail in question 10.

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## STAGE 3 - Obtain

10) Is there a process for obtaining data in relation to this dataset?

**Answer:** Process is fully implemented, reviewed and updated on a regular basis.

**Justification Comment:**

**Attachment(s):** 0

The business process for land acquisition includes robust process for obtaining data in relation to this data set. The initial phase of the acquisition program involves the assembly of available maps, survey plats, deeds, and other tract ownership data pertinent to the area to be acquired. The magnitude, extent, and complexity of the project naturally determines the extent of research required and the early assembly of all available information is critical to later phases of mapping, determination of ownership, legal description writing, and acquisition.

Even in cases where National Park Service currently has no ownership of a piece of land within a unit's legislated a boundary an assessment is done to identify any authoritative data sources that can be used to create and/or supplement the data that is being created. The most accurate and newest data is always considered when provided by an authoritative source. This ensures no duplication of efforts when creating data.

These business processes are detailed in the "Land Acquisition Procedures Manual" (LAPS) – Chapter 5. These processes are not limited to the creation of this data set but are also used when creating maps that will accompany legislation that creates new NPS unit or modifies the boundary of existing units. These processes are reviewed annually and updated as needed.

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11) Is the metadata in a FGDC endorsed geospatial metadata standard?

**Answer:** Metadata is available in a format endorsed by the FGDC, it fully describes the dataset and provides all the information required to make the dataset discoverable, accessible, and usable.

**Justification Comment:**

**Attachment(s):** 0

Metadata is created using the FGDC Content Standard for Digital Geospatial Metadata (CSDGM). This data is available for the nationwide data set. However because the source material and quality of individual unit's of the National Park Service vary between individual units' the metadata for the national data set focuses on making the data discoverable and identifying points of contact for questions about appropriate use of the data. This nationwide metadata record identifies this data as a NGDA data set for inclusion in the Cadastre Theme Community on Geoplatform.gov.

<http://www.geoplatform.gov/node/243/9d405135-3b44-4d9b-b215-68beeefd2ebd>

The nationwide metadata record also contains pointers that direct users to legislated boundary and ownership GIS data sets for each individual unit of the National Park Service. This CSDGM metadata is created for each individual unit prior to publication. These metadata records are substantially more detailed than the nationwide metadata record. While they still provide information for discovery and points of contact for the data, these metadata records describe in detail the source material and process used to create the data. They also define the positional accuracy and use constraints of the data.

The National Park Service currently uses CSDGM as their metadata standard. However the Land Resources Division is an active participant in the FGDC ISO Implementation Forum. We are involved with this group in order to ensure we are ready when NPS converts to the ISO 19115 standard.

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**12)** How complete is the geographic coverage as defined in the requirements for the dataset?

**Part 1 Answer:** Business requirements for cyclic updates identified and a process is in place.

**Part 2 Answer:** Dataset presently about 75% complete per current requirement.

**Justification Comment:**

**Attachment(s):** 0

This data set contains boundary polygons in a shape file format that came from data from three different efforts. Boundaries digitized as part of the Horizon Project, boundaries collected from parks and regions by the GIS Division in 2001, and boundaries that the Lands Resources Division (LRD) has updated. The units LRD has updated are noted in metadata, attributed with the word "Lands" in the shape file, and listed in an email announcement that is sent out when any change to the file that gets posted on IRMA and Geoplatform.gov.

LRD has been creating parcel level polygon data for each NPS unit from source legal descriptions, deeds, surveys, segment maps, legislation and other appropriate sources. Once parcels are created a clean topology of the data is developed and the appropriate parcels are merged to build each unit's legislative boundary. LRD is tasked with the creation and maintenance of over 150,000 parcels and as such not all NPS units are replaced immediately. So far LRD has created and approved the release of data for 329 of the 408 units of the National Park Service or a little over 80%.

Data from the Horizon Project or 2001 GIS effort provide 100% coverage of NPS units. However, this data is considered "legacy" and is replaced with LRD data as soon as it's approved for public release. In cases where LRD won't be updating a specific unit boundary in the near future data is occasionally accepted from an approved NPS source as a place holder. This data must be accompanied by FGDC compliant metadata and provide a current point of contact.

Updates to this data set are driven by the volume of changes to existing legislated boundaries and NPS ownership as well as when the conversion of LRD's hard copy data to a digital data has been completed. Currently LRD is updating this file approximately every other month.

Boundary data is one of the most fundamental data layers used by all NPS. Modifications to this are

centrally coordinated by LRD. LRD is committed to ensuring that this data set represents the best available digital data.

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## STAGE 4 - Access

**13)** Do you have a process for providing users access to the data in an open digital machine readable format?

**Answer:** User access process is fully implemented, data is available, process is reviewed and updated on a recurring basis.

**Justification Comment:**

**Attachment(s):** 0

A process has been fully implemented that allows users to access to this data in an open machine readable format. The publicly accessible data is updated approximately bi-monthly. For additional details on these regular updates to the data downloads see the responses to questions 12 and 14.

The National Park Service Land Resources Division's (LRD) boundary and ownership Geographic Information System (GIS) data is legally open. The general public is permitted to freely to access, use, and redistribute this data.

LRD's GIS data is also technically open. These data sets are freely available for download from the following publicly accessible sites.

<https://irma.nps.gov>

<http://www.geoplatform.gov>

In addition to the downloads this data is also available to the public as a REST service.

<http://mapservices.nps.gov/arcgis/rest/services/LandResourcesDivisionTractAndBoundaryService/MapServer>

These data sets are published as ESRI (Environmental Systems Research Institute) shapefiles. Shapefiles are a common machine-readable format. This is a popular file format for geospatial data. It is maintained and published by ESRI, the largest manufacturer of GIS software. Although the format is technically proprietary, ESRI publishes a full specification standard and shapefiles can be read by a wide range of software. The shapefile format was developed by ESRI as a predominantly open specification to promote interoperability between its products and other GIS software so shapefiles can be opened in many GIS programs. In practice shapefiles function like an open standard.

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## STAGE 5 - Maintain

**14)** Is there a maintenance process for updating and storing the dataset?

**Answer:** Dataset maintenance process is fully implemented and processes are reviewed and periodically updated.

**Justification Comment:**

**Attachment(s):** 1

This data set is in continual maintenance. This means that the data is regularly updated for changes caused by improved source material, legislative changes to National Park Service boundaries, and changes in ownership status of land within the boundary. Updates are driven by volume and currently occur approximately every other month. Whenever an update occurs an email notification is sent out to NPS employees as well as employees of other Federal agencies that have requested to be on the mailing list.

A general update guidance document is posted on an internal Land Resources Division (LRD) website (<http://landsnet.nps.gov>) that provides a flow chart and a narrative description of the boundary update process so all NPS employees know how they can participate in the update process. This guidance document has been provided in the upload section of this question.

The data set is replicated on two NPS servers. Incremental tape backups of the primary production data set are done every evening. A full tape backup of the data is done every weekend. Full tape backup that also includes source imagery are done monthly. Tapes backup are stored in a vault offsite. Historical releases of the data are retained and available to produce a versioned data set that allows users to see changes in the data set overtime.

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**15)** Is there an error correction process as part of dataset maintenance?

**Answer:** Error correction process established.

**Justification Comment:**

**Attachment(s):** 0

Significant quality control and quality assurance procedures are in place in order to prevent errors in this data set (see response to question 6). In addition to the Land Resources Division's (LRD) process of evaluation each unit's legal documentation like deeds, legislation, survey data, etc... input from parks, programs, and regional offices is sought both before and after publication. Despite these efforts errors may still occur or, more often, the data may appear to contain errors as the result of improved source material.

The method by which users can provide feedback is clearly defined in each unit's metadata and well as in the boundary update process document that is attached to question 14. Historically most feedback is the result of a lack of understanding about the data and taking the time to explain what is going on to the user resolves the majority issue brought to LRD. However, occasionally this user feedback uncovers an error in the data. When an error is identified it's resolved in a timely fashion and included in the next data set update. An email notice is sent out every time the data set is updated (see response to question 14).

These feedback mechanisms are well established internally and have proved a good source of information that's used to strengthen the data set. For example if a survey is conducted by the park to examine an encroachment or some other park management issue, this feedback process provides a mechanism NPS employees can use to communicate the existence of the new survey data LRD so it can be incorporated as appropriate in the next update to the data.

The feedback loops defined in metadata are also available to other Federal agencies and the general public but are not utilized very often. Other agencies tend to approach issues with the data by direct interaction with NPS on inter-agency coordination teams (see response to question 5). Teams developing these processes still have a large task before them. NPS is a charter member on all of the major groups working toward the goal of integration of Federal boundary data and plans on remaining active for the foreseeable future.

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## STAGE 6 - Use/Evaluate

**16)** Is there a process to determine if the dataset meets user needs?

**Answer:** Process is complete and being implemented on ad hoc basis.

**Justification Comment:**

**Attachment(s):** 0

A mature process exists for determining that this data set meets user needs. As stated in question 4, this data set is primarily created and maintained to support the NPS land acquisition business process. This data both in hard copy and digital formats has supported that business process for decades.

Internally the Land Resources Division (LRD) has worked with individual parks, regions, other programs, and offices like the NPS Legislative and Congressional Affairs to successfully meet this mission for years. Within NPS LRD is an active member of the Geographic Information Systems Council. This body is used to identify new NPS user needs.

Over that past several years a growing group of users has emerged for this data. LRD works to identify new users and define their needs. When a new partner or stakeholder is identified the data is provided via the NPS IRMA data portal (<https://irma.nps.gov/App/Portal/Home>). This data portal is publically accessible. Efforts are made to educate the users about the data both through direct contact, metadata, and other documentation that describes the data.

Meeting the needs of new partners and stakeholders as well as responding to the changing needs of existing users remains a challenge of LRD. To meet this challenge LRD works within groups like the FGDC Federal Lands Working Group, the National Boundaries Group, and the FGDC Cadastral Subcommittee to identify user requirements and determine the most efficient way to meet the needs of other government stakeholders outside the NPS.

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**17)** Is there a process to provide users information on how to access and properly use the dataset?

**Answer:** Process implementation started for access and proper use.

**Justification Comment:**

**Attachment(s):** 1

Each park comes with a complete FGDC metadata record (see response to question 11). This metadata record contains information on use constraints as well as a “NPS Data Distribution Liability Statement” in order to define appropriate uses of the data.

NPS regularly engaged users at meetings and conferences giving presentations on how to obtain and proper use of this data. Additionally Memorandums of Understanding (MOU) have been drafted and signed with other Federal agencies to ensure this data gets properly incorporated into their systems. See the attached MOU between NPS and USGS for an example of this activity.

Working through groups like the FGDC National Boundaries Group (NBG) and the Federal Lands Working Group is how LRD ensures that this data is not only available to other Federal agencies but that appropriate use of the data is defined and easily incorporated into their business process. An example of this activity is recently LRD added Geographic Names Information System (GNIS) identification numbers to this data set. This not only allows USGS to use this data as an approved source for park names and designations but it also allowed them to automate this process. While the data is not the authoritative source for this information it is completely identical to the source for official NPS unit names and designations. LRD has made it possible to obtain unit names, designations, legislated boundaries and ownership information from a single download.

These data sets are available for public download from the following sites:

<https://irma.nps.gov>  
<http://www.geoplatform.gov>

This data is available to the public as a REST service:

<http://mapservices.nps.gov/arcgis/rest/services/LandResourcesDivisionTractAndBoundaryService/MapServer>

NPS users have access to the source material used to create the data, official land status maps, and KMZ files for use in Google Earth on:

<http://landsnet.nps.gov>

**18)** Are the business processes and management practices assessed to meet changing technology?

**Answer:** Assessment process is fully implemented for taking advantage of changing technology, process is reviewed on a recurring basis.

**Justification Comment:**

**Attachment(s):** 0

The NPS-LRD Digital Map Conversion Standard Operating Procedures (SOP) was originally developed in 2006 to cover the creation of this data. This document is updated regularly to accommodate changing technology.

The two software packages that are primarily used to create and maintain this data are Autodesk Infrastructure Design Suite Premium and ESRI's ArcMap. A DOI Blanket Purchase Agreement (BPA) has recently been adopted for Autodesk software. Historically updates to Autodesk software were available to LRD employees because all licenses were under subscription. This BPA centralizes Autodesk software and ensures that updates are available to all DOI employees. Updates to the ArcMap software are covered by an DOI Enterprise License Agreement (ELA). This agreement has been in place for several years and ensures LRD employees always have access to the latest version of ESRI software.

LRD cartographers have a section in their performance plans requiring them to keep up to date on the latest technology and industry trends in GIS and CAD software. Employees are encouraged to attend training events like the ESRI User Conference and Autodesk University as often as budget and schedules permit. This allows LRD's cartographers to stay up to date as new technology emerges. LRD cartographers are the front line resource when it comes to incorporating new technology into our system.

Advances in technology are brought to the Chief Cartographer. The Chief Cartographer incorporates these advances into LRD's business process as appropriate. Regular staff meetings are held with to discuss and train LRD cartographers on new technology. As recent example of how this works was a cartographer attended the ESRI User Conference where he developed a Python Script to automatically post-process our ownership and boundary shapefiles. This process had been manual until recently. After the Chief Cartographer tested this script a "how to" document was developed and distributed to all cartographic staff along with the script. A meeting was held with all cartographic to answer questions about the new process. This new technical write up will be included as a new chapter in the SOP which is currently under development.

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## STAGE 7 - Archive

**19)** Is there an archiving process for the dataset?

**Answer:** Archival and disposition processes are fully implemented.

**Justification Comment:**

**Attachment(s):** 0

Supporting legal documents like deeds, legislation, and land status maps are posted to an internal document archives maintained by the Land Resources Division called LandsNet (<http://landsnet.nps.gov/>). Additionally most of these documents are numbered and supplied to the NPS Technical Information Center (TIC) according to NPS Directory Order 11-D (<http://www.nps.gov/policy/DOrders/DO-11D.pdf>). TIC's information system was planned, developed and refined over 40 years. It is the oldest and largest information system in the National Park Service. TIC is designated by the Service as the central repository for managing all NPS-generated drawings,

specifications, scientific and technical reports. TIC holding are accessible through the ETIC Information Gateway (<http://etic.nps.gov/>).

References are created from LRD's metadata records for all LRD data posted to IRMA (<https://irma.nps.gov/>). These references persist even when updates are posted. When a data set is updated a new reference is created and activated. The old reference is inactivated or quarantined so it is no longer visible to the public. However the reference itself as well as the data persists in IRMA. This data is only viewable by IRMA developers and the Chief Cartographer, who is the reference owner for all LRD data. Outdated references are linked in IRMA to the current reference. Users trying to access an old reference will automatically be directed to the new reference. Even if there were hundreds of old references IRMA users will automatically step through the old references until they arrive at the new data. This allows any links users have created to LRD data to still work long after the data has been retired.

Source data like deeds are sent to the Federal Records Centers (FRC) that is operated by the National Archives and Records Administration (NARA) to house the records of Federal agencies. As the nation's record keeper, documents that have been determined to have legal or historical significance are preserved according to 44 U.S. Code § 3103 - Transfer of records to records centers. NPS retains legal custody, even though the records are in the physical custody of FRC.

The data set is replicated on two NPS servers. Incremental tape backups of the primary production data set are done every evening. A full tape backup of the data is done every weekend. Full tape backup that also includes source imagery are done monthly. Tapes backup are stored in a vault offsite. Historical releases of the data are retained and available to produce a versioned data set that allows users to see changes in the data set overtime. Source data is also dated and archived when it is received from regional offices. Both the historic data releases and raw data from the regional offices are part of these regular tape back-ups.